

## Abstract

An Ethernet Optical Area Network (EOAN) system, and methods for implementing and using such an EOAN system, are disclosed. The EOAN system may be used to improve the speed and reliability of data communications networks for small to medium-sized companies in metropolitan area networks. The EOAN system provides end-to-end Ethernet protocol, enabling professionals to have high-speed data communications in real time. The EOAN system may be generally utilized for improving data communications between branch offices, home offices, campuses, and remote sites for a wide variety of industries. The present invention preferably includes a fiber optic ring, Network Operation Center (NOC), NOC architecture components, existing client equipment, and one or more Free Space Optic (FSO) devices, microwave communication technology, and/or data switching platforms to implement high-speed Ethernet-based connections such as within a specified metropolitan area. The preferred EOAN system preferably integrates a plurality of FSO, microwave, and/or fiber optic technologies with Ethernet protocol (Fast Ethernet, Gigabit Ethernet, 10 Gigabit, etc.) to provide data connection services.